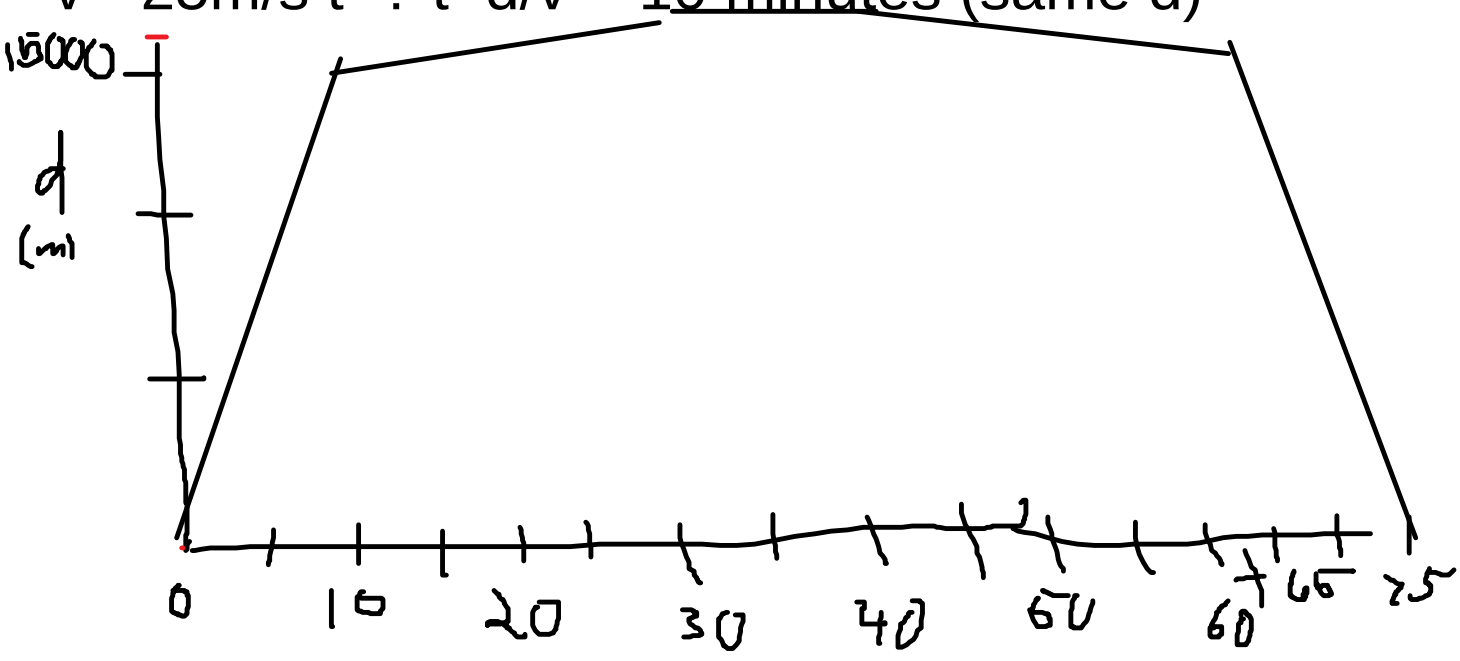
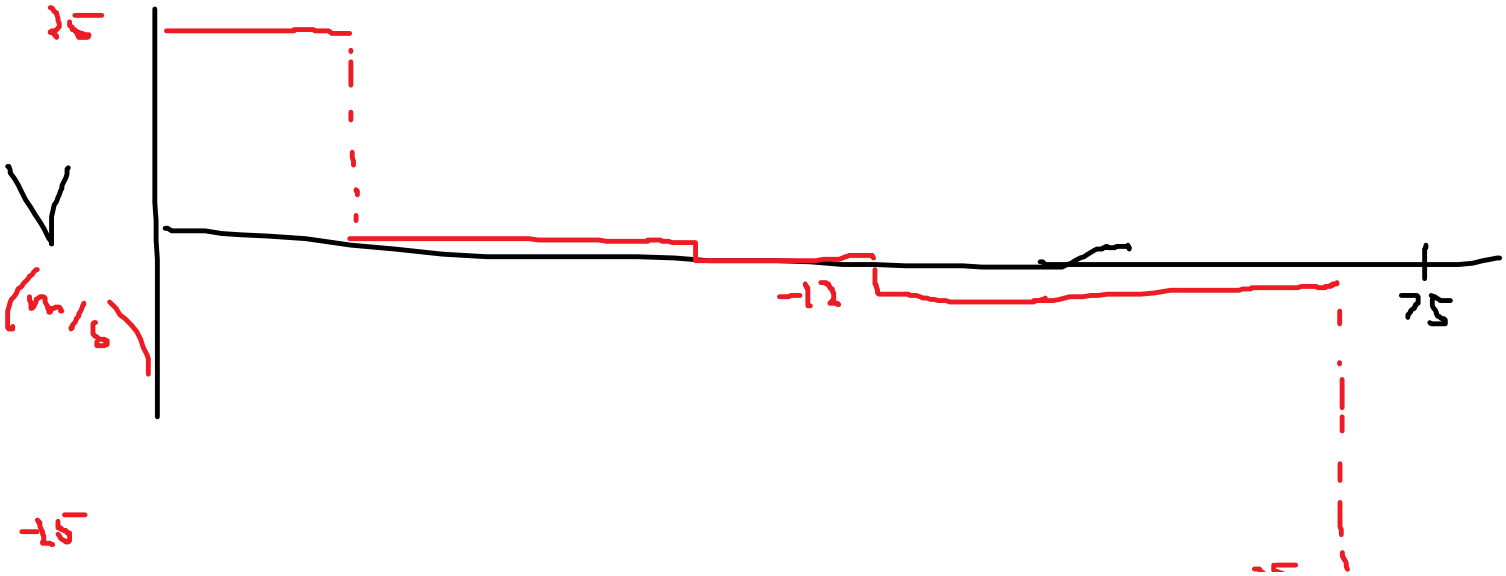
Homework
Q19
(see answer at back of textbook, pen problems)

v=25m/s t=10min d=vt 25x10x60=15,000 m
v=1.5m/s t=20min d= 1.5x20x60=1,800 m
t=10min v=0
v=-1.2m/s t=? d=vt t=d/v = 1800/1.2=1500 s
1500/60=25 min
v=-25m/s t=? t=d/v = 10 minutes (same d)





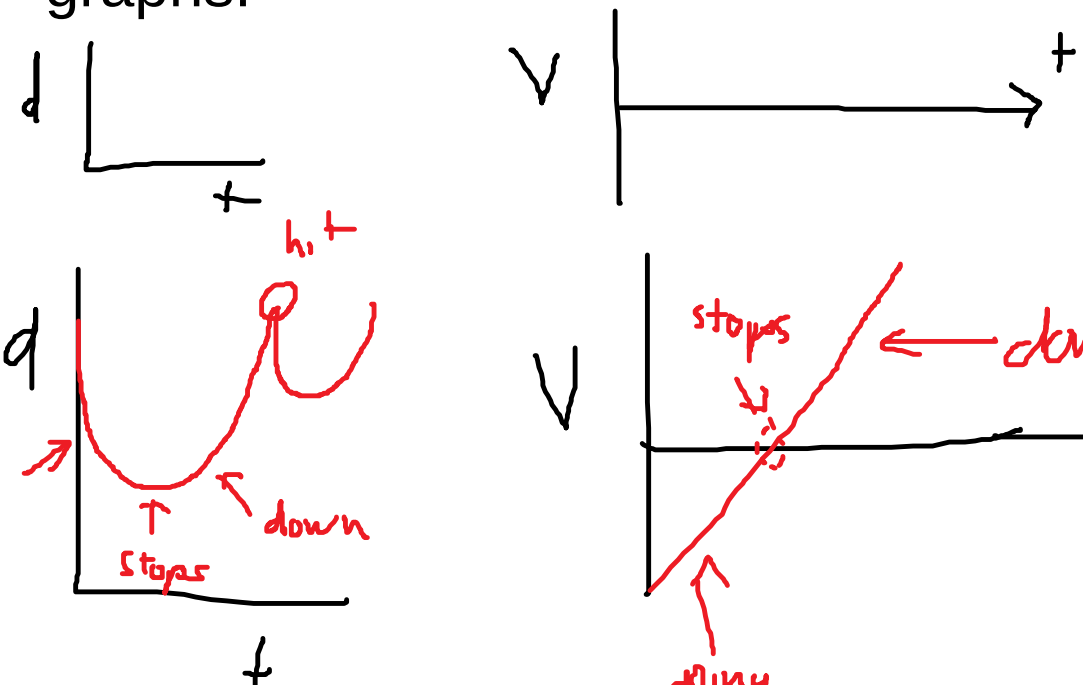
This all assumes a constant velocity - flat v-t graph or a linear d-t graph

What if the velocity is not constant?

Look at a cart on a slope:

cart is pushed up the slope with initial velocity, v_i, at time t=0.
the motions sensor will measure the initial velocity of the cart as being negative.

predict the shape of the d-t and v-t graphs:



t

going up

uniform acceleration - v-t graph is linear with slope = $a=\Delta v/\Delta t = (v_f-v_i)/t$ or $v_f=v_i + at$

homework: p 66Q1-4, p68 Q5-8